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U.S. Department of the Interior • U.S. Geological Survey

# MINERAL INDUSTRY SURVEYS

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## VANADIUM IN JANUARY 1997

Consumption data for vanadium in January 1997 were not available for inclusion in this Mineral Industry Surveys. Consumption data for January 1997 will be published in a subsequent issue.

From the start, world vanadium prices moved upwards in the month of January 1997. Ferrovanadium (FeV) sales in the United States began the year in the \$7.45-\$7.65 per lb V content range, up from about \$7.40 in December 1996. By the end of January 1997, prices had increased to the \$7.65-\$7.85 range. Vanadium pentoxide ( $V_2O_5$ ) followed a similar pattern, beginning 1997 at \$3.25-\$3.35 per pound and increasing to the \$3.50-\$3.70 range by the end of the month. In the European market, sales of FeV were reported in the \$15.75-\$15.95 range in the first week of January 1997 and increased to the \$18.30-\$19.00 range by the end of the month. A shortage of supplies from Russia and China was usually the reason given for the price increases. Producers welcomed the price increases, but would like to avoid a price spike similar to the one that occurred in 1989-1990 when the price of  $V_2O_5$  increased to over \$11.00

per pound. During that time vanadium lost market share to niobium and molybdenum.

### New Ferrovanadium Plant Being Considered

South African vanadium producer Vantec, a wholly owned subsidiary of Swiss-based metals trader Glencore, is considering the construction of a new ferrovanadium conversion plant which will increase the company's capacity to 600 tons per month. This development is in line with the trend at other South African producers toward the production of ferrovanadium, which generates higher revenues. The plant will most likely to be an expansion of an existing plant in the town of Steelpoort. Vantech's Steelpoort plant was built in 1994 and started operating in mid-1995. If the expansion is completed, the plant would use material from the Rhovan Mine, the sole asset of Rhoex, in which Glencore obtained 80% ownership last year.<sup>1</sup>

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<sup>1</sup>Platt's Metals Week, Mar. 27, 1997, p. 9.

TABLE 1  
U. S. EXPORTS OF ALUMINUM-VANADIUM MASTER ALLOY, FERROVANADIUM, OXIDES  
AND HYDROXIDES OF VANADIUM, AND VANADIUM METAL IN DECEMBER 1996 1/

(Kilograms, vanadium content unless otherwise specified)

Material and country	Quantity	Value	Year to date p/	
			Quantity	Value
Aluminum-vanadium master alloy: 2/				
Argentina	--	--	1,080	\$14,000
Australia	--	--	499	6,380
Austria	2,180	\$6,220	16,100	178,000
Barbados	--	--	18,900	237,000
Canada	--	--	94,300	1,160,000
Chile	--	--	770	10,000
France	--	--	2,980	38,800
Germany	2,980	44,500	7,390	110,000
Ireland	--	--	782	14,600
Japan	296	8,700	20,400	322,000
Korea, Republic of	--	--	3,270	42,500
Malaysia	--	--	897	11,700
Mexico	--	--	32,900	434,000
Philippines	--	--	409	5,310
Russia	--	--	15,200	274,000
Suriname	--	--	139	6,460
Switzerland	--	--	571	7,420
Taiwan	16,600	244,000	20,700	291,000
United Kingdom	201	2,610	68,700	1,200,000
Venezuela	--	--	3,810	49,600
Total	22,300	306,000	310,000	4,410,000
Ferrovanadium:				
Australia	--	--	546	6,830
Canada	33,400	545,000	320,000	5,720,000
Guatemala	--	--	114	3,760
Mexico	23,500	315,000	156,000	3,020,000
Venezuela	--	--	2,300	76,800
Total	56,900	861,000	479,000	8,830,000
Vanadium pentoxide (anhydride): 3/				
Austria	14,800	58,200	19,100	99,400
Belgium	--	--	7,850	103,000
Chile	--	--	18	2,680
France	--	--	12,100	132,000
Italy	16,200	130,000	107,000	913,000
Japan	--	--	13,800	126,000
Kuwait	--	--	4,970	34,300
Mexico	1,670	16,000	6,370	62,500
Netherlands	16,300	116,000	16,300	116,000
Pakistan	--	--	6,040	83,600
Peru	--	--	2,260	10,400
Singapore	962	14,600	962	14,600
Taiwan	--	--	632	6,000
United Kingdom	--	--	43,500	356,000
Total	50,000	335,000	241,000	2,060,000
Other oxides and hydroxides of vanadium:				
Argentina	998	4,400	1,360	7,600
Australia	--	--	675	6,000
Canada	46,300	330,000	327,000	2,360,000
France	--	--	15,200	128,000
Germany	--	--	6,290	67,300
Italy	--	--	17,200	137,000
Japan	--	--	100	3,610
Mexico	2,500	25,600	2,500	25,600
Russia	--	--	12,300	110,000
South Africa	--	--	61,100	474,000
Spain	--	--	2,210,000	9,030,000
Switzerland	--	--	13,800	74,100
Total	49,800	360,000	2,670,000	12,400,000

See footnotes at end of table.

TABLE 1--Continued  
U. S. EXPORTS OF ALUMINUM-VANADIUM MASTER ALLOY, FERROVANADIUM, OXIDES  
AND HYDROXIDES OF VANADIUM, AND VANADIUM METAL IN DECEMBER 1996 1/

(Kilograms, vanadium content unless otherwise specified)

Material and country	Quantity	Value	Year to date p/	
			Quantity	Value
Vanadium metal, including waste and scrap: 2/				
Australia	--	--	2,320	\$105,000
Austria	--	--	6,060	236,000
Canada	--	--	1,750	46,700
France	--	--	8,660	344,000
Germany	--	--	636	18,100
Japan	52,500	\$531,000	52,500	531,000
Taiwan	--	--	131	11,900
United Kingdom	149	43,200	85,000	622,000
Total	52,700	574,000	157,000	1,910,000

p/ Preliminary.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Gross weight.

3/ May include catalysts containing vanadium pentoxide.

Source: Bureau of the Census.

TABLE 2  
U.S. IMPORTS FOR CONSUMPTION OF ALUMINUM-VANADIUM MASTER ALLOY,  
FERROVANADIUM, OXIDES AND HYDROXIDES OF VANADIUM, AND VANADIUM METAL IN DECEMBER 1996 1/

(Kilograms, vanadium content unless otherwise specified)

Material and country	Quantity	Value	Year to date p/ 2/	
			Quantity	Value
Aluminum-vanadium master alloy: 3/				
Germany	--	--	1,610	\$16,500
Russia	--	--	4,200	136,000
Total	--	--	5,810	153,000
Ferrovanadium:				
Austria	--	--	45,100	718,000
Belgium	--	--	62,700	947,000
Canada	73,600	\$1,170,000	685,000	10,700,000
China	8,790	131,000	251,000	3,520,000
Czech Republic	46,000	655,000	487,000	6,820,000
Germany	--	--	2,690	32,300
Russia	--	--	70,400	1,440,000
South Africa	15,300	233,000	231,000	3,490,000
Tajikistan	--	--	40,500	626,000
Total	144,000	2,190,000	1,880,000	28,300,000
Vanadium pentoxide (anhydride): 4/				
China	--	--	40,800	329,000
France	--	--	10,200	252,000
Germany	--	--	517	21,700
Hong Kong 5/	1,130	18,900	1,330	37,500
South Africa	40,900	503,000	446,000	5,540,000
United Kingdom	--	--	5	28,800
Total	42,100	521,000	499,000	6,210,000
Other oxides and hydroxides of vanadium:				
France	--	--	304	48,600
Germany	--	--	5	4,490
United Kingdom	--	--	10,500	152,000
Total	--	--	10,800	205,000
Vanadium metal, including waste and scrap: 3/				
France	--	--	138	8,500
Germany	109	3,180	56,300	588,000
Korea, Republic of	5,290	16,700	35,300	16,700
Russia	1,470	78,700	4,410	182,000
United Kingdom	--	--	5	15,900
Total	6,870	98,500	96,100	811,000

p/ Preliminary.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ May include revisions to previous months' data.

3/ Gross weight.

4/ May include catalysts containing vanadium pentoxide.

5/ All or part of these data have been referred to the Bureau of the Census for verification.

Source: Bureau of the Census.

TABLE 3  
U.S. IMPORTS FOR CONSUMPTION OF VANADIUM-BEARING  
ASH, SLAG AND RESIDUES IN DECEMBER 1996 1/

(Kilograms, vanadium pentoxide content)

Material and country	Quantity	Value	Year to date p/	
			Quantity	Value
Ash and residues:				
Canada	19,800	\$51,800	241,000	\$693,000
Dominican Republic	--	--	23,100	16,600
Germany	--	--	5,150	3,960
Kuwait	3,640	22,700	3,640	22,700
Mexico	63,700	179,000	781,000	2,560,000
Netherlands	--	--	13,000	7,050
Netherlands Antilles	--	--	87,900	168,000
Portugal	--	--	7,130	6,470
United Kingdom	--	--	14,800	3,260
Total	87,100	254,000	1,180,000	3,490,000
Ash and residues (not from the manufacture of iron and steel):				
Canada	52,700	13,500	1,410,000	320,000
Slag, from the manufacture of iron and steel:				
South Africa	302,000	1,170,000	1,470,000	5,670,000
Other residues: (Not advanced in value)	--	--	--	--

p/ Preliminary.

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census.

TABLE 4  
U.S. IMPORTS FOR CONSUMPTION OF MISCELLANEOUS  
VANADIUM CHEMICALS IN DECEMBER 1996 1/

(Kilograms, vanadium content)

Material and country	Quantity	Value	Year to date p/ 2/	
			Quantity	Value
Sulfates:				
India	--	--	25	\$14,900
Vanadates:				
Germany	--	--	3,450	76,500
South Africa	16,600	\$155,000	73,900	553,000
Switzerland	1 3/	1,590 3/	101	5,240
Total	16,600	156,000	77,400	634,000
Hydrides and nitrides:				
South Africa	--	--	255,000	4,630,000

p/ Preliminary.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ May include revisions to previous months' data.

3/ All or part of these data have been referred to the Bureau of the Census for verification.

Source: Bureau of the Census.